NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho (PIH) **REPORT FOR:** **MONTH:** March **YEAR:** 2017
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Travis Wyatt Service Hydrologist / Acting **DATE:** April 17, 2017
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

☐ **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

Precipitation tapered off in March with a large area of our HSA, mainly valleys, receiving below normal precipitation. Our extreme Northwest, Northeast, and Southeast corners received above normal precipitation. Monthly total rainfall was 5.03 inches at the Stanley ASOS and 2.86 at the Stanley CO-OP station and 2.86 inches at the Soda Springs CoCoRaHs station. Stanley had the only daily precipitation record for our 5 climate locations. The Stanley CO-OP station also had the 2nd most precipitation for the month of March. Most of the area had temperatures 3 to 6 degrees above normal with Butte County receiving temperatures 6 to 10 degrees above normal. Burley was 6.7 degrees above normal while Stanley was 5.5 degrees above normal. Stanley also broke the only high temperature record for our 5 climate locations. Mean average temperatures ranged from 29 degrees F for Stanley to 47 degrees F for Oakley across the HSA.

The above normal temperatures as well as rain on snow brought moderate to severe flooding to Bear Lake, Bingham, Blaine, Caribou, Lincoln, and Minidoka counties particularly early in the month due to mainly low-land flooding. There was widespread damage to roads and to a lesser degree homes and businesses across these counties. There was an ice jam early in the month along Antelope creek that caused minor flooding to a couple of farms in Butte county. The Portneuf river in Pocatello also reached minor flood stage with only minor field flooding reported. The Bear river in Bear Lake county also reached minor flood stage with mostly minor field flooding reported. At the end of the month, the Magic reservoir went over the spillway. This caused moderate flooding of the Big wood just below the Magic reservoir causing the main road to the Magic reservoir to be flooded for several days. Some other minor field and road flooding was reported as well.

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the eastern Idaho forecast is for 33 to 40 percent chance for below normal temperatures and 40 to 50 percent chance of above normal precipitation. The one-month forecast graphics are below. For the three-month outlook, the temperature forecast is equal chances for above or below normal for most of the area with our most Southern areas having a 33 to 40 percent chance to be above normal. As for three-month outlook for precipitation, the outlook continues with a 33 to 40 percent chance of above normal precipitation pattern across most of eastern Idaho. Only the most Southern areas have an equal chance for near normal precipitation.

Of the data available for the month, the stations (non-SNOTEL and non-RAWS) within the HSA reaching the highest 24-hour temperatures were Oakely and Paul COOP stations both reaching 75°F on the 15th and 21st

respectively. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature were the Stanley and Monteview COOP stations at -10°F and -4°F respectively on the 2nd and 1st respectively. The highest recorded 24-hr precipitation (non-SNOTEL) occurred at the Driggs and Lifton Pumping station COOP stations where 1.29 and 0.72 inches respectively fell on the 31st and 23rd respectively. The highest recorded monthly precipitation totals (non-SNOTEL) occurred at the Stanley ASOS, and the Stanley, Soda Springs (CoCoRaHs), Bellevue, and Bern COOP stations where 5.03, 2.86, 2.18, 1.77 and 1.75 total inches respectively were recorded. Most basins were above normal. The basins receiving the greatest precipitation were the Big Wood, Big Wood above Hailey, Henrys Fork Falls river, Snake River above Jackson, Henrys Fork above Rexburg, Snake River above Palisades and the Big Lost above Mckay receiving 160%, 155%, 153%, 150%,145%, 143%, and 124% of average precipitation respectively for the month of March-based on SNOTEL data.

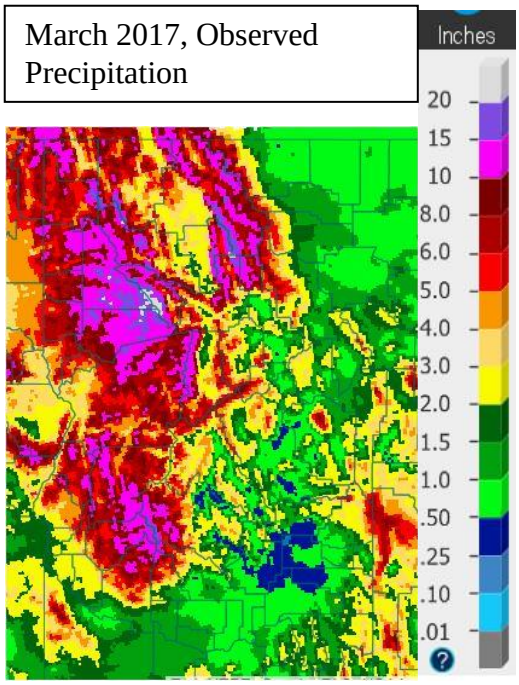
Reservoirs last month increased capacity overall by around 7% in the upper Snake River basin system and is currently sitting at 61% of capacity overall. Compared to last year at this time, it was about 77% of capacity. According to the Natural Resources Conservation Service and U.S. Bureau of Reclamation reservoir data, the most notable decrease in storage capacity was the Magic and Oakley reservoirs decreasing percent capacity by 45% and 38% respectively. The U.S. Bureau of Reclamation and canal companies have continued releasing water in most reservoirs in preparation for flood season. Mackay, Palisades, Jackson and Grassy Lake increased storage by 45%, 38%, 6% and 6% respectively. Only American Falls remained unchanged, all other reservoirs showed slight decreases in storage capacity. The Magic, Oakley, Blackfoot, and Ririe reservoirs currently have the highest percent of average at 208, 158, 148 and 142 respectively, and Palisades, Little Wood and Mackay reservoirs have at the lowest at 51%, 65% and 66% of average respectively.

Current streamflow conditions in eastern Idaho are near normal for the lower Snake River plain, much above normal for the Upper Snake River plain and the Portneuf Basin, and high for the mountains, particularly above Palisades, the Bear river, and the Central and Sawtooth mountains for monthly streamflows of the unregulated streams (see USGS streamflow graphic below).

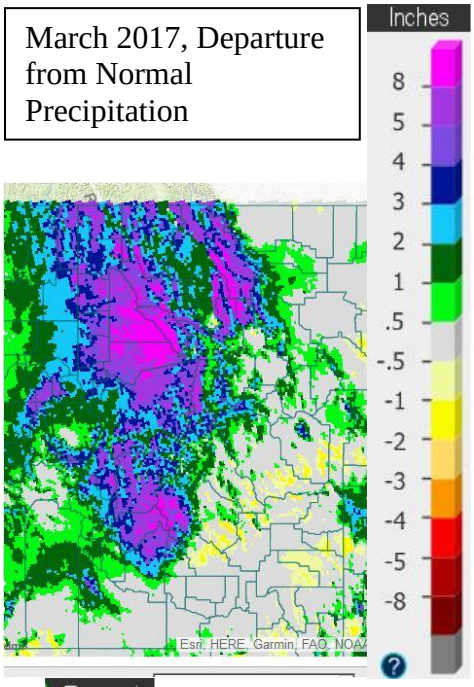
Because of well above normal seasonal precipitation, drought conditions across eastern Idaho continue to be 0 percent in March as reflected on the latest U.S. Drought Monitor. The latest update of the U.S. Seasonal Drought Outlook shows no change for the eastern Idaho's drought outlook forecast.

Precipitation:

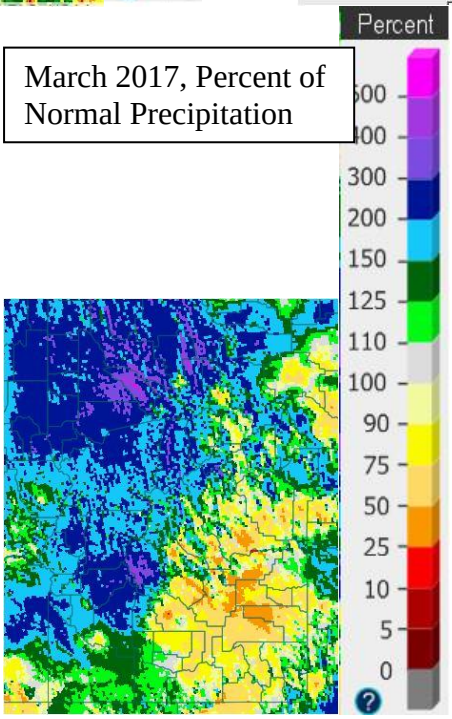
March 2017, Observed Precipitation



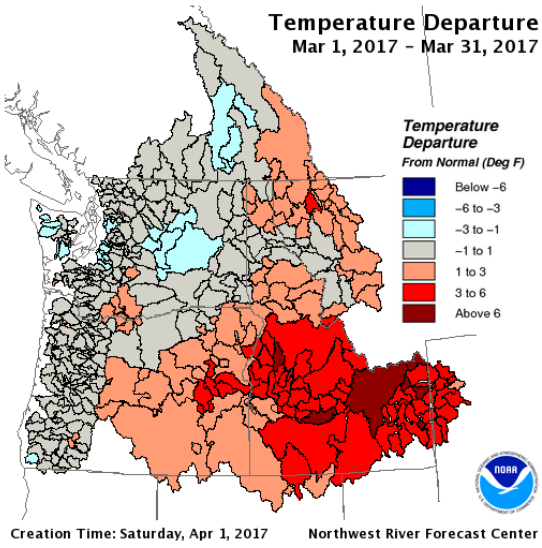
March 2017, Departure from Normal Precipitation



March 2017, Percent of Normal Precipitation



www.water.weather.gov/precip/#



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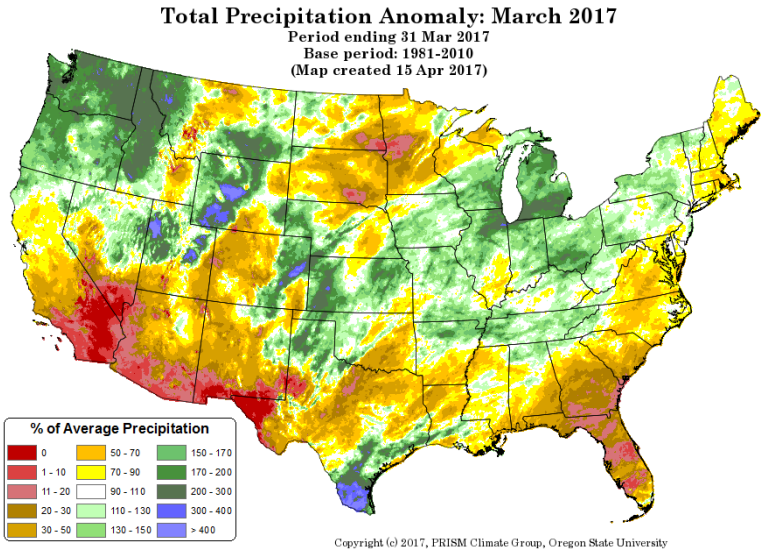
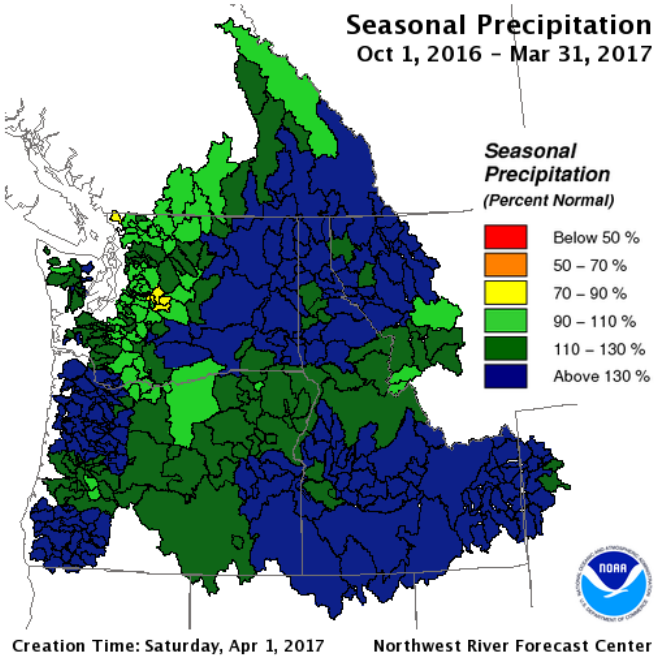


http://prism.oregonstate.edu/comparisons/anomalies.php



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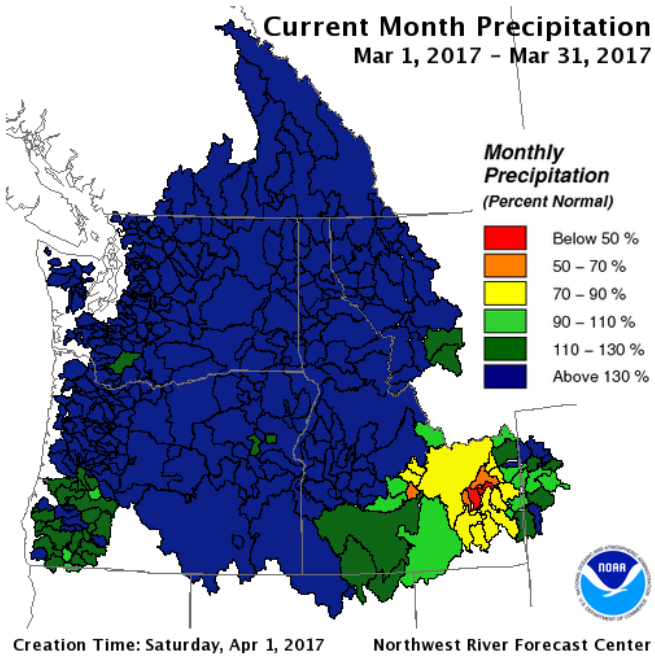

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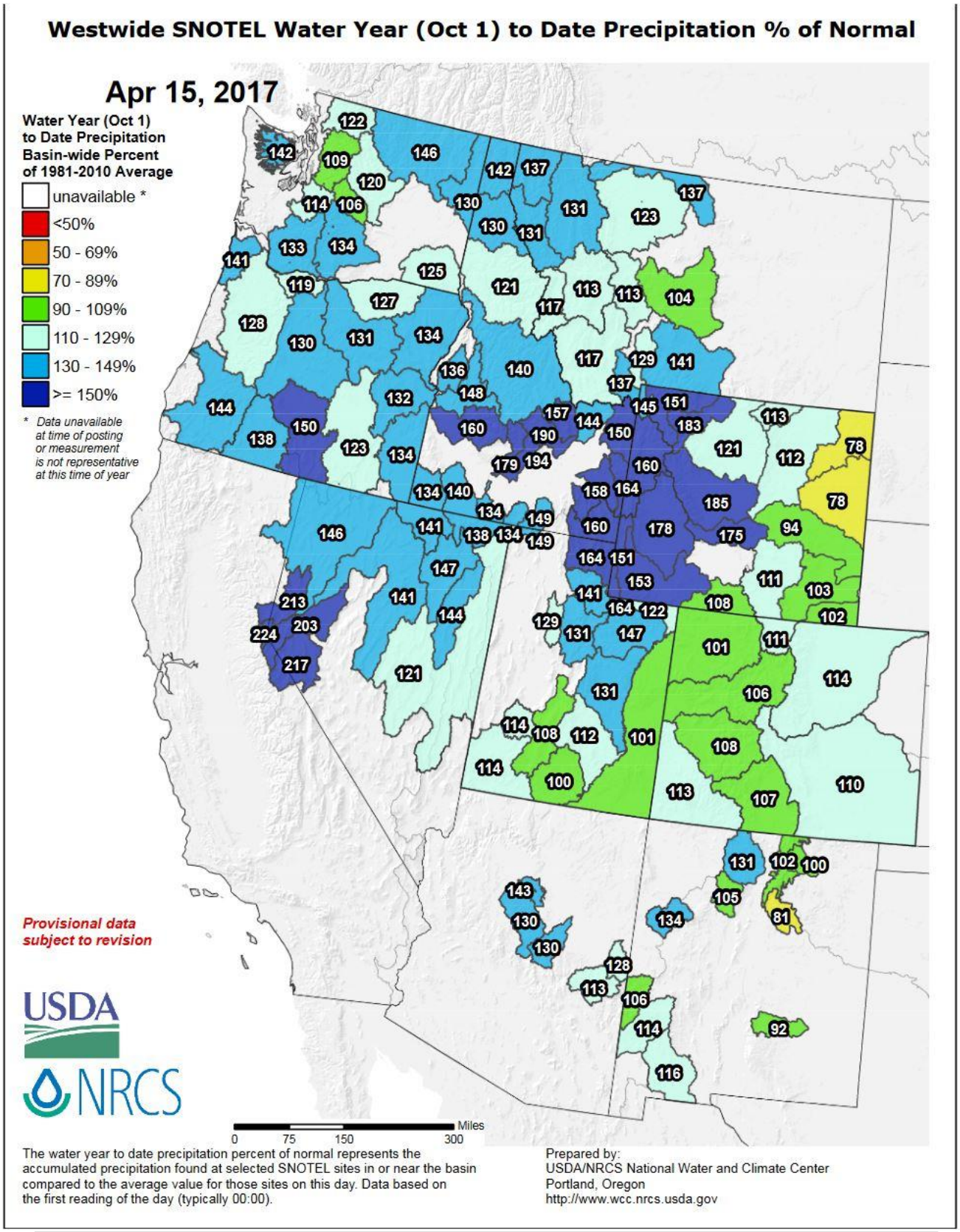
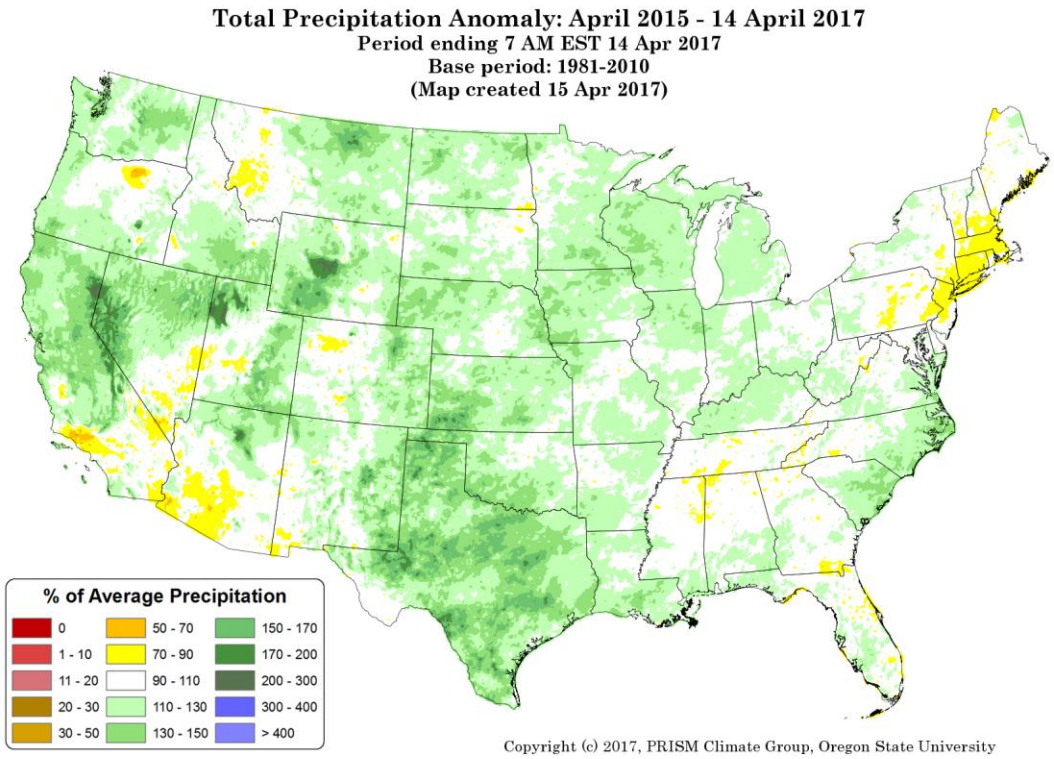
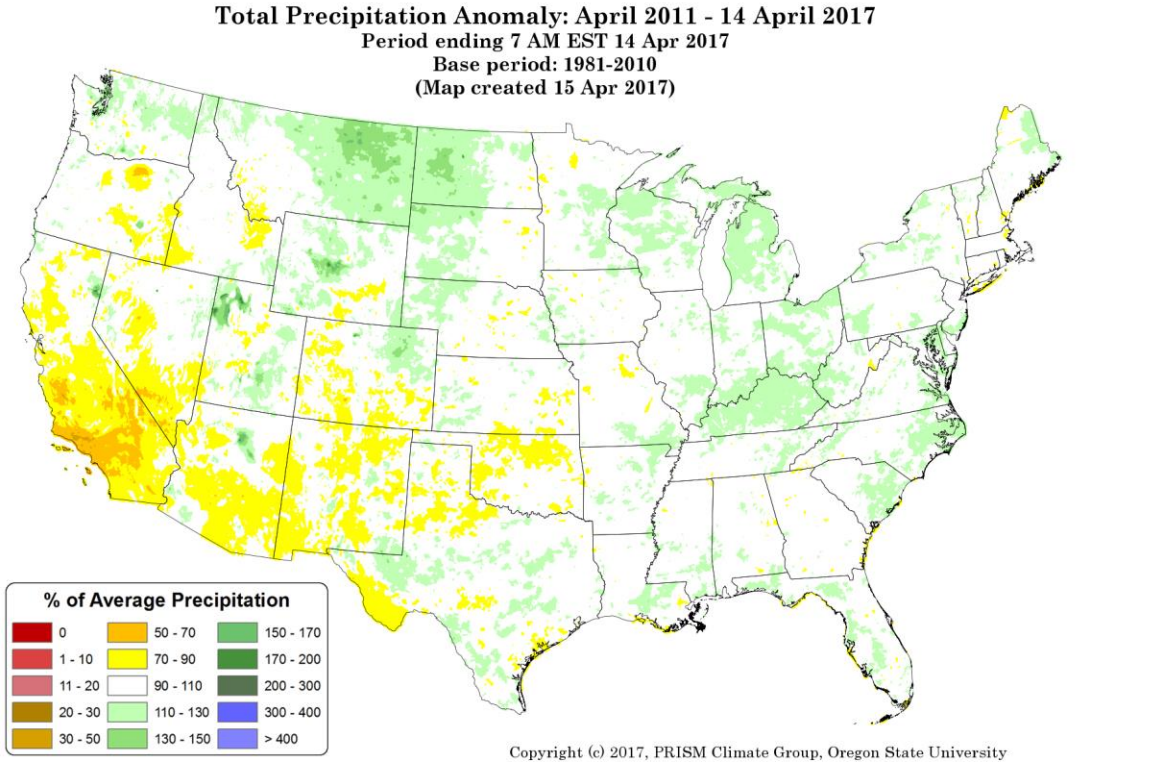


http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpctnormal_update.pdf

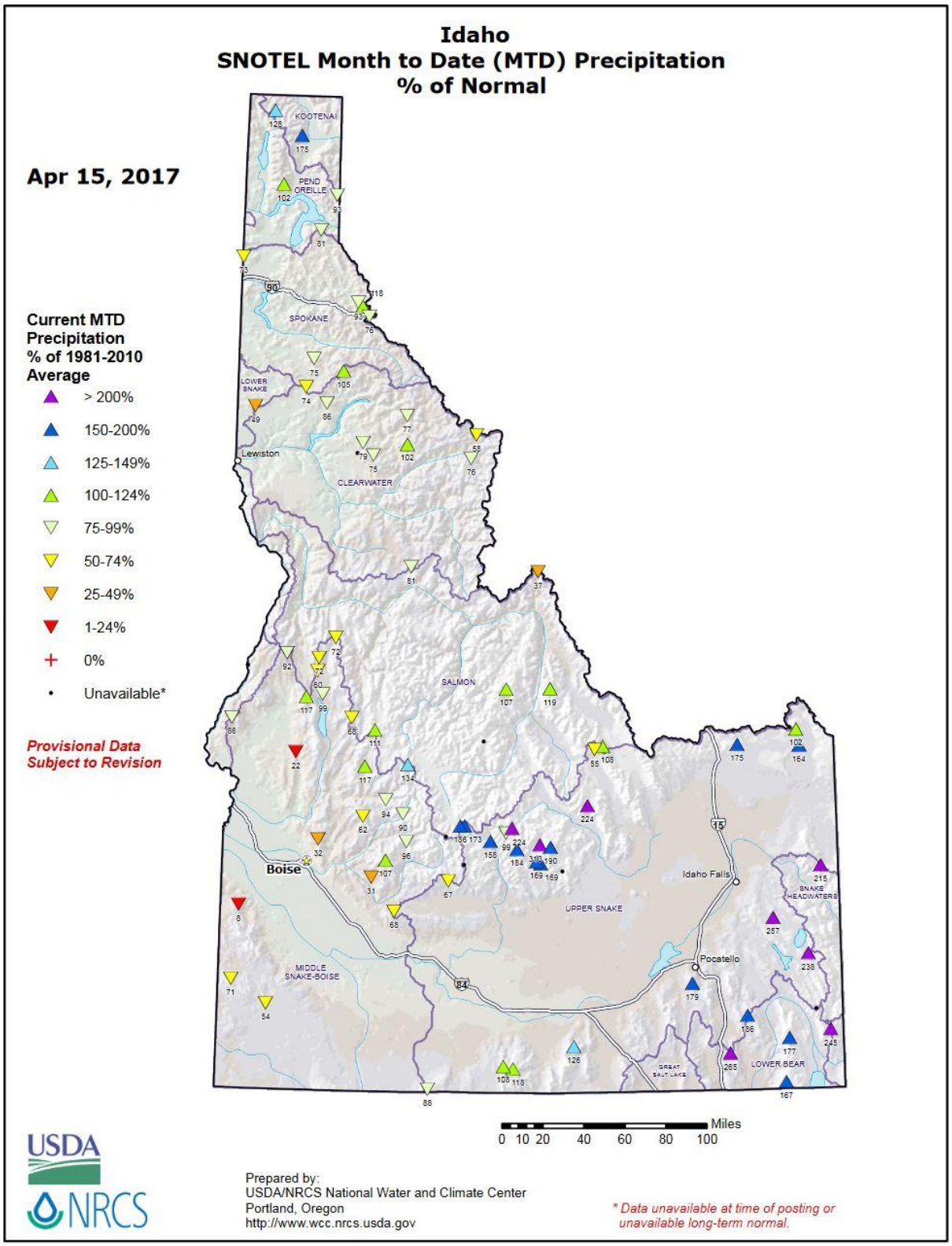
Past 2 Years of Precipitation % of Average:



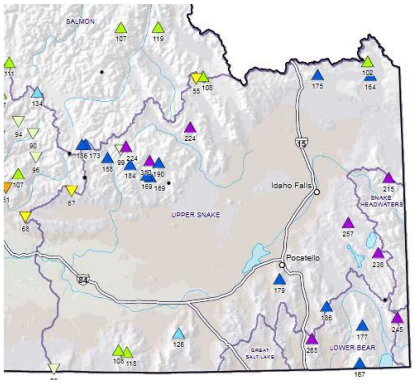
Past 6 Years of Precipitation % of Average:



www.prism.oregonstate.edu/comparisons/drought.php

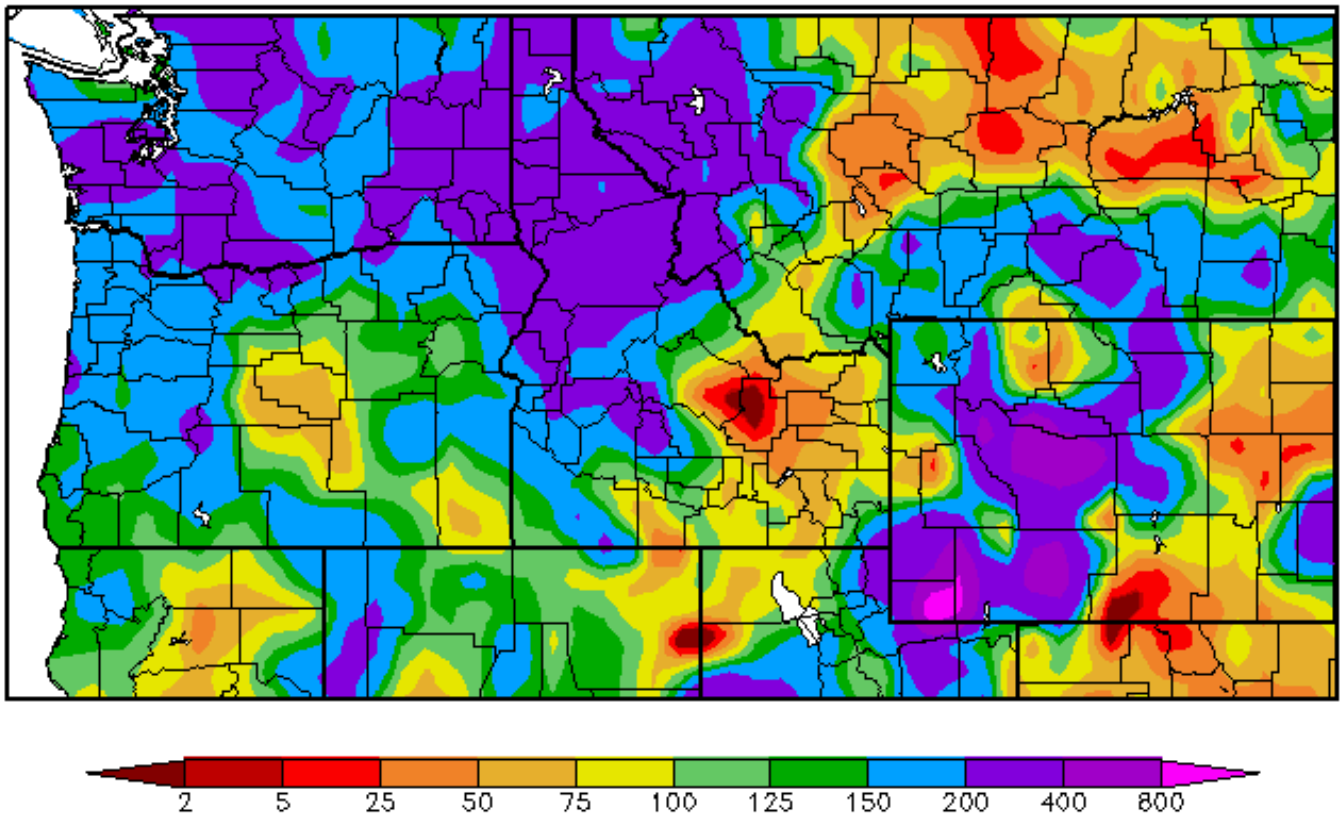


http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecpctnormal.pdf



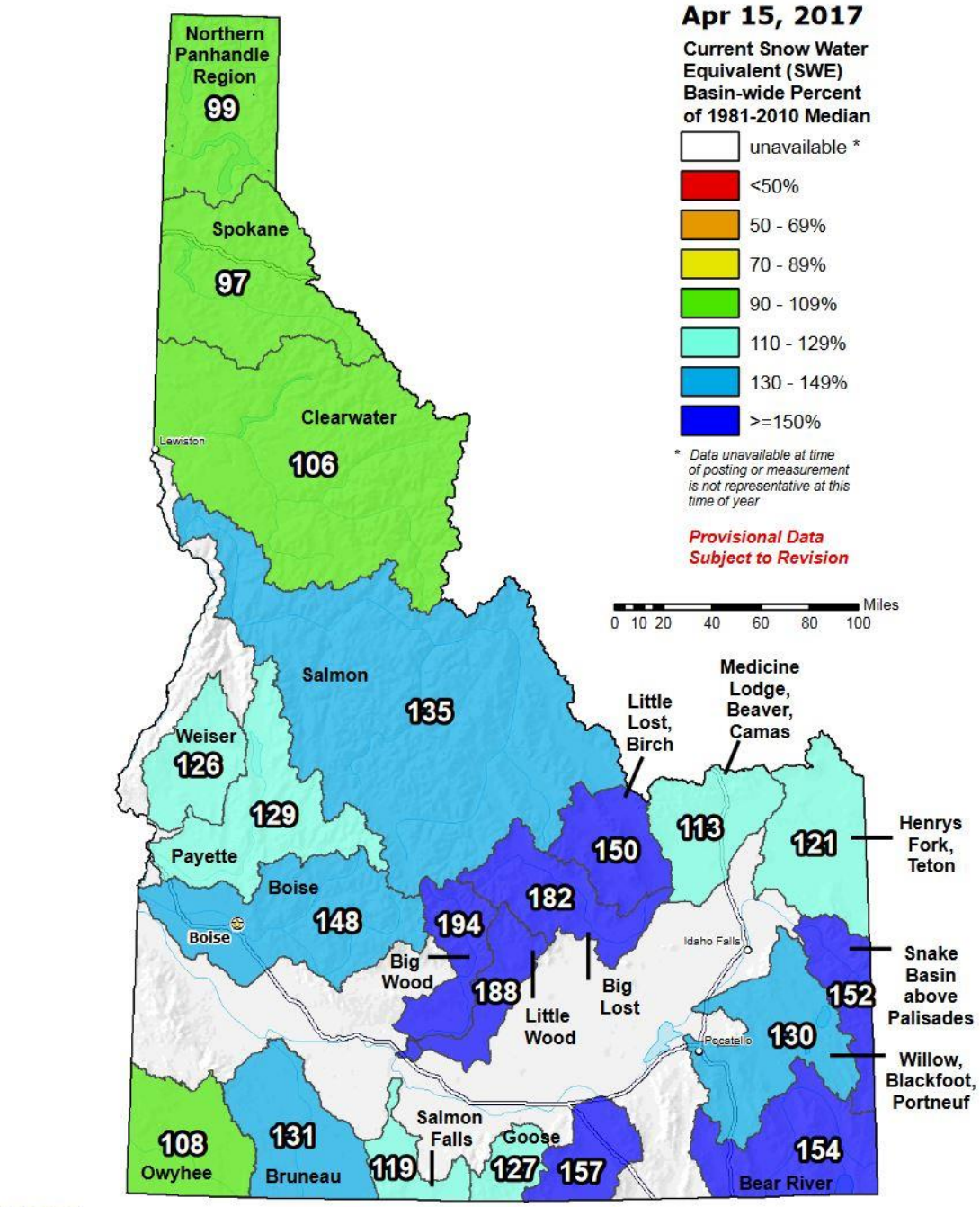
SNOTEL MTD % of Normal Precipitation for middle of March 2017
(image is cropped from above image)

Percent of Normal Precipitation (%)
3/1/2017 – 3/31/2017



Only our most Northwestern, Northeastern and Southeastern mountain areas continued with above normal precipitatoin with the Western Central mountains receiveing 150 to 200 percent of normal, eastern Island park area receiving 125 to 150 percent of normal, and Southeast Bear lake county receiving 150 to 400 percent of normal. The majority of the area received 50 to 75 percent of normal. Butte and Eastern Custer counties were the low spots, receiving 2 to 25 percent of normal.

Idaho SNOTEL Current Snow Water Equivalent (SWE) % of Normal

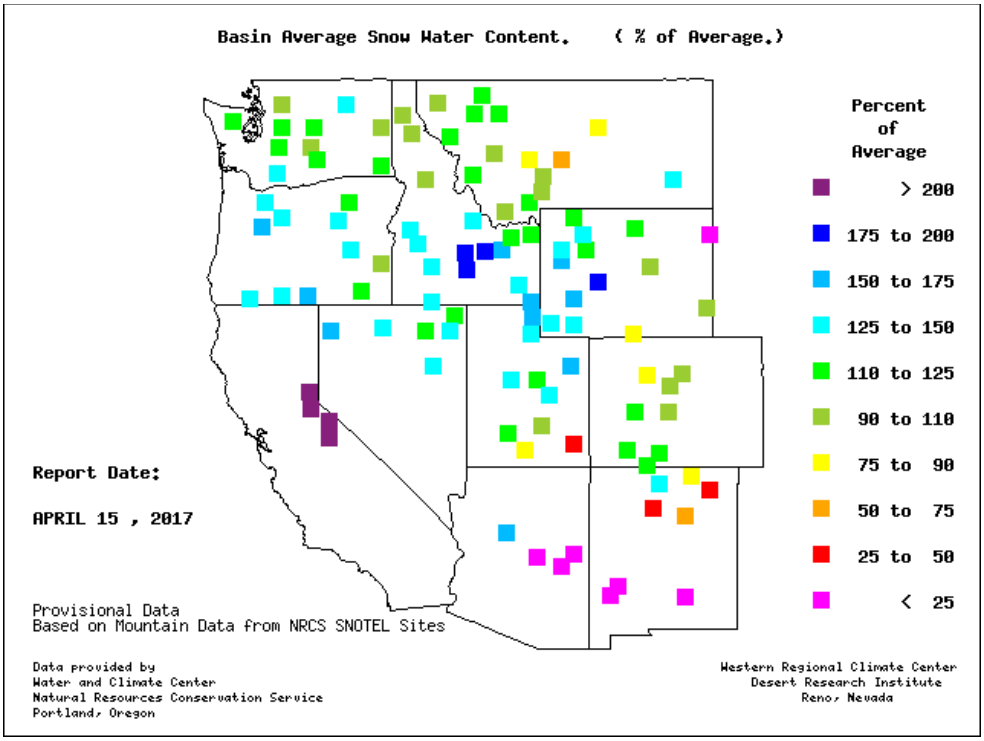


USDA NRCS

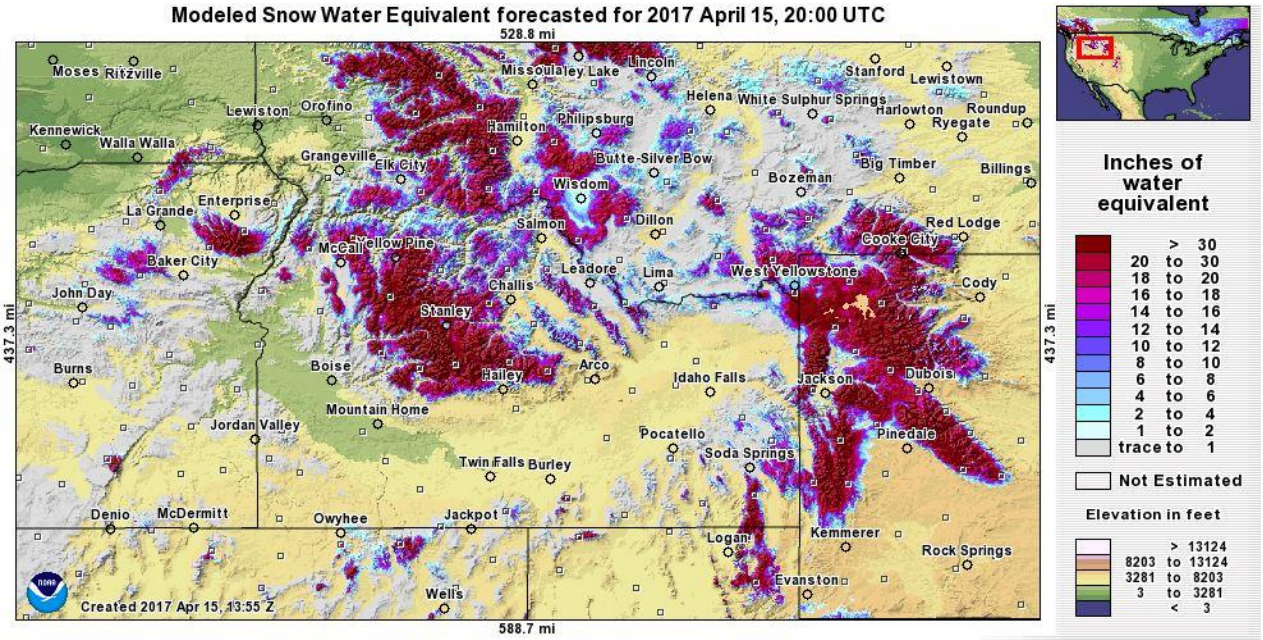
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_swepctnormal_update.pdf



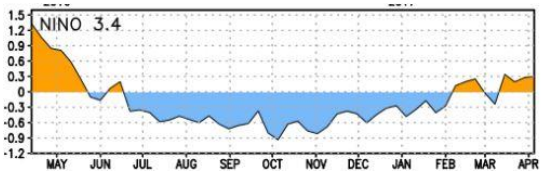
www.wrcc.dri.edu/snotelanom/basinswe.html



www.nohrsc.noaa.gov/interactive/html/map.html

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ -0.2 Deg C



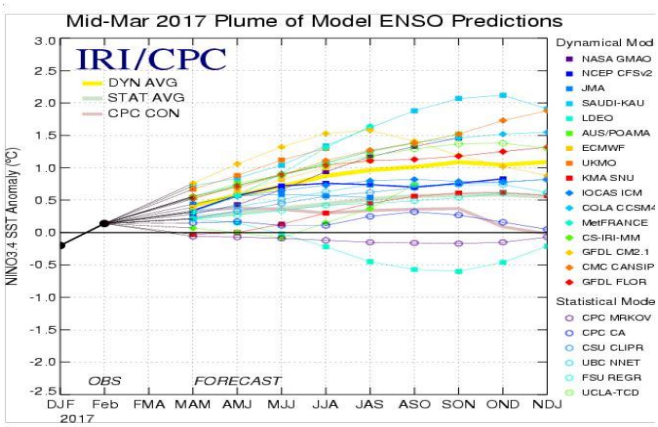


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 15 March 2017).

www.cpc.ncep.noaa.gov, **iri.columbia.edu/climate/ENSO** ***and***

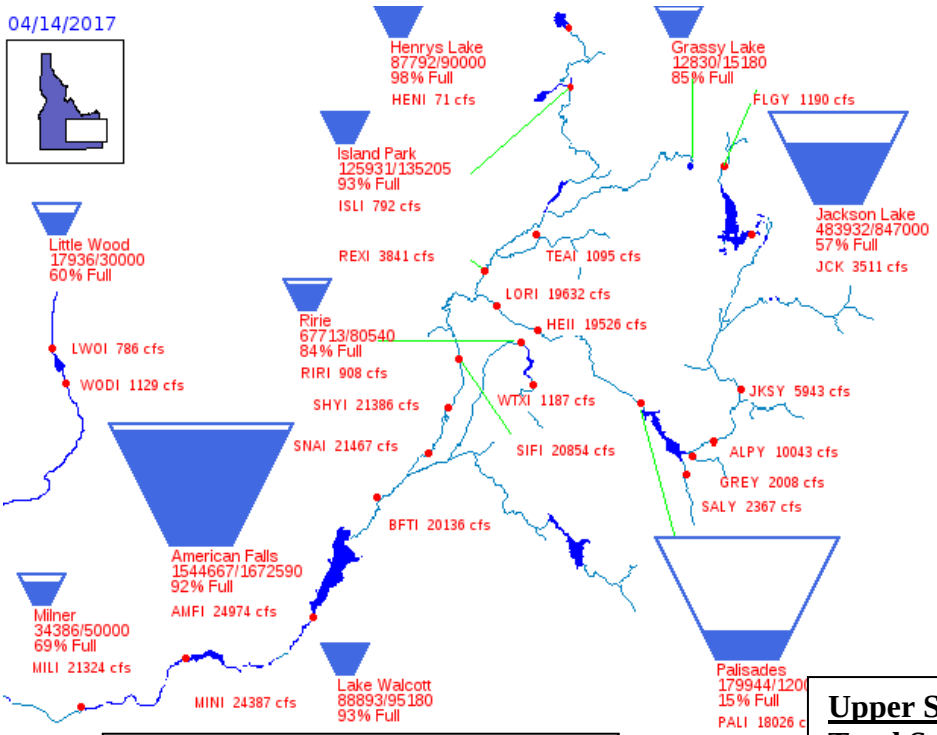
CPC Synopsis: ENSO-neutral conditions are present. Enso-neutral conditions are favored to continue through at least the Northern Hemisphere spring 2017, with increasing chances for El Nino development by late summer and fall.

Note: Equatorial sea surface (SSTs) are near-average across the central and east-central Pacific. They are above-average in the east-central Pacific Ocean. Doubts exist about the presence of a true Madden-Julian Oscillation (MJO) event, with a Kelvin wave potentially being aliased into the Wheeler-Hendon index. With this in mind, no MJO impacts are anticipated throughout the global tropics or subtropics in the next two weeks. The Pacific Decadal Oscillation (PDO) is still slightly positive.

Reservoirs:

Reservoir	% Capacity February 28[1]	% Capacity March 31[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	69	63	-6	125	133
Palisades	52	33	-19	51	108
Henrys Lake	94	97	3	108	99
Island Park	73	86	13	104	108
Grassy Lake	95	89	-6	110	110
Ririe	62	79	15	142	118
Blackfoot	70	82	12	148	104
American Falls	87	87	0	98	91
Mackay	80	46	-34	66	110
Little Wood	38	43	5	65	112
Magic	52	97	45	208	100
Oakley	24	62	38	158	76
Bear Lake	42	51	9	108	87
Lake Walcott	88[3]	93[4]	5	n/a	n/a
Milner	65[3]	69[4]	4	n/a	n/a

Source: (1) NRCS February 28, 2017; (2) NRCS March, 2017.
(3) US Bureau of Reclamation (BOR) March 14, 2017 (4) BOR April 12, 2017

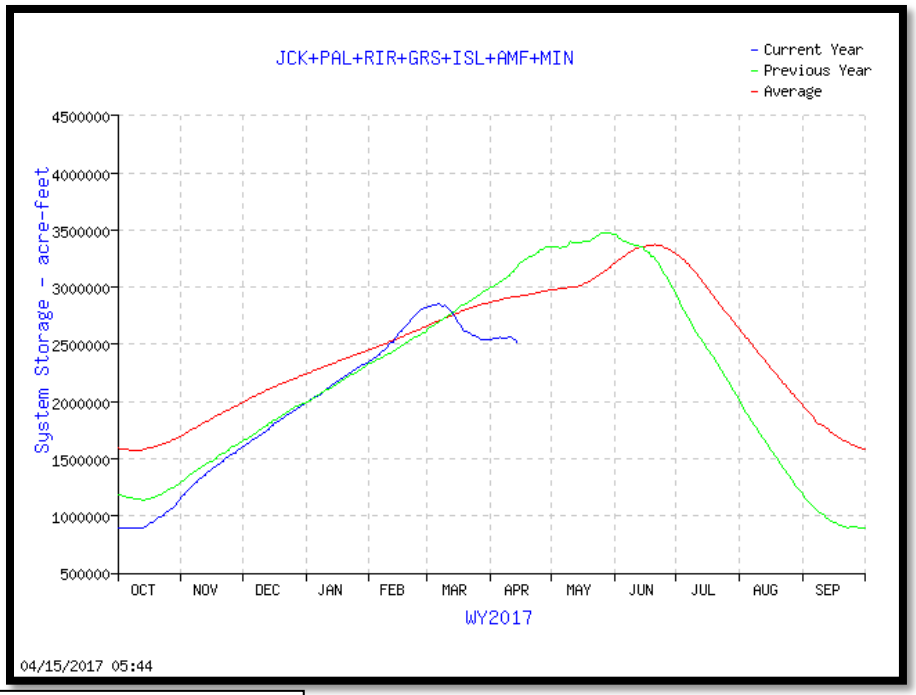


www.usbr.gov/pn/hydromet/burtea.html

68% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

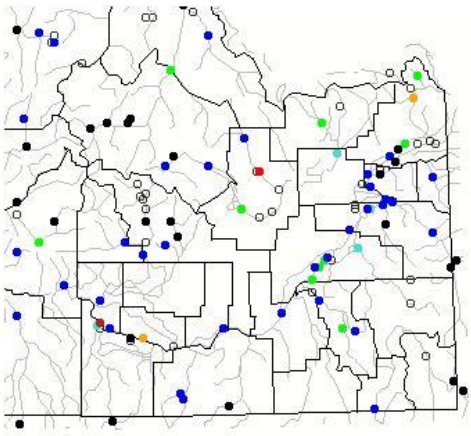
Upper Snake River:
Total Space Available: 1,541,786AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



https://www.usbr.gov/pn-bin/graphwy.pl?snasys_af

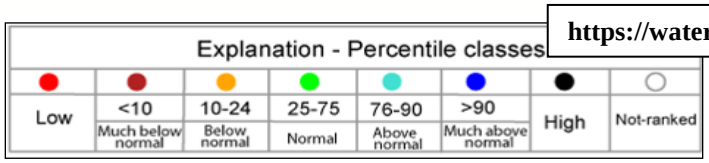
Streamflow:

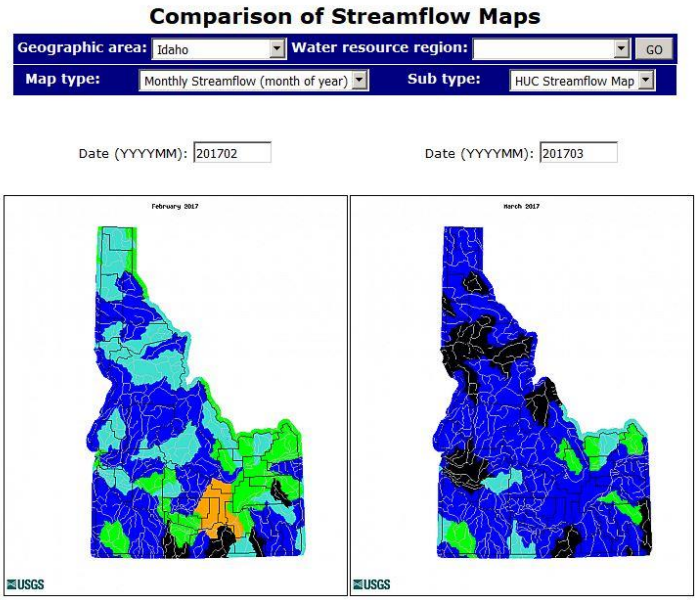


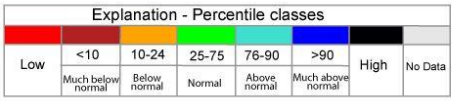
Monthly average streamflow compared to historical average streamflow for March 2017.

USGS

https://waterwatch.usgs.gov/index.php?r=id&id=mv01d



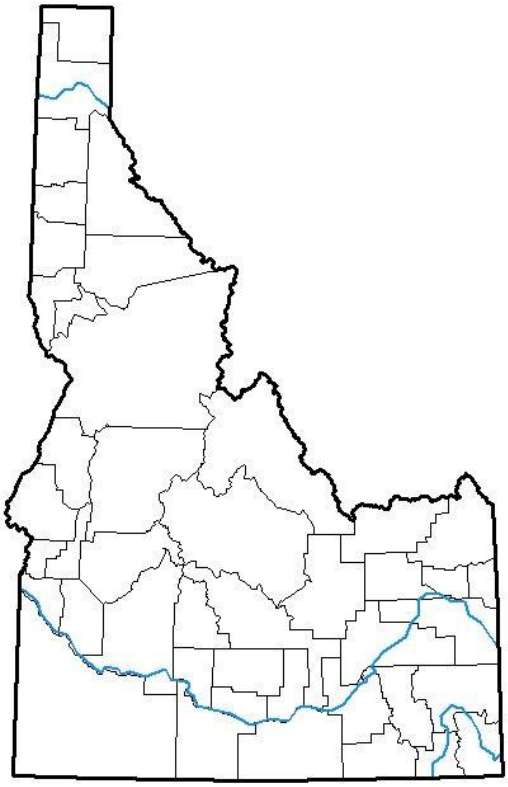




http://waterwatch.usgs.gov/index.php?id=wwchart_map2

Drought:

U.S. Drought Monitor
Idaho



April 11, 2017
(Released Thursday, Apr. 13, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 04-04-2017	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 01-10-2017	98.13	1.87	0.04	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	89.98	10.02	0.04	0.00	0.00	0.00
Start of Water Year 09-27-2016	6.14	93.86	8.89	0.00	0.00	0.00
One Year Ago 04-12-2016	91.97	8.03	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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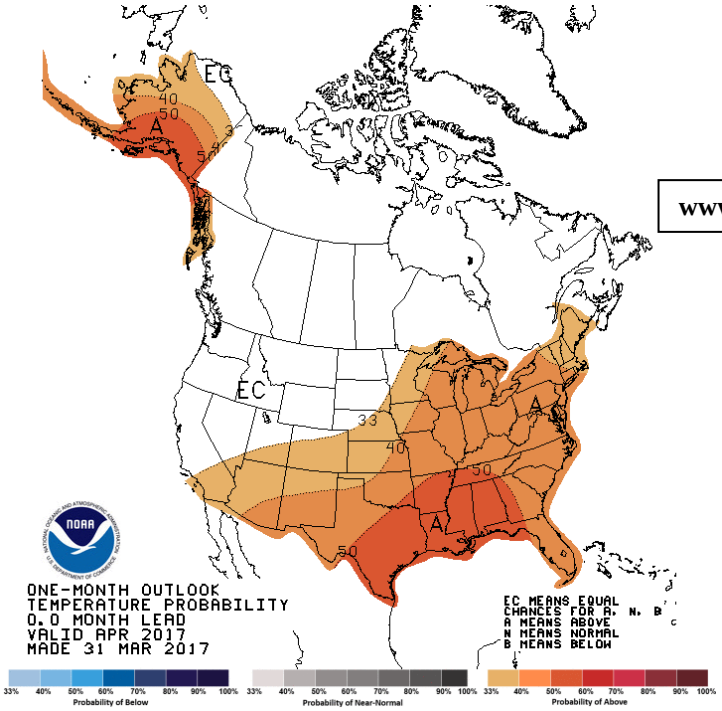
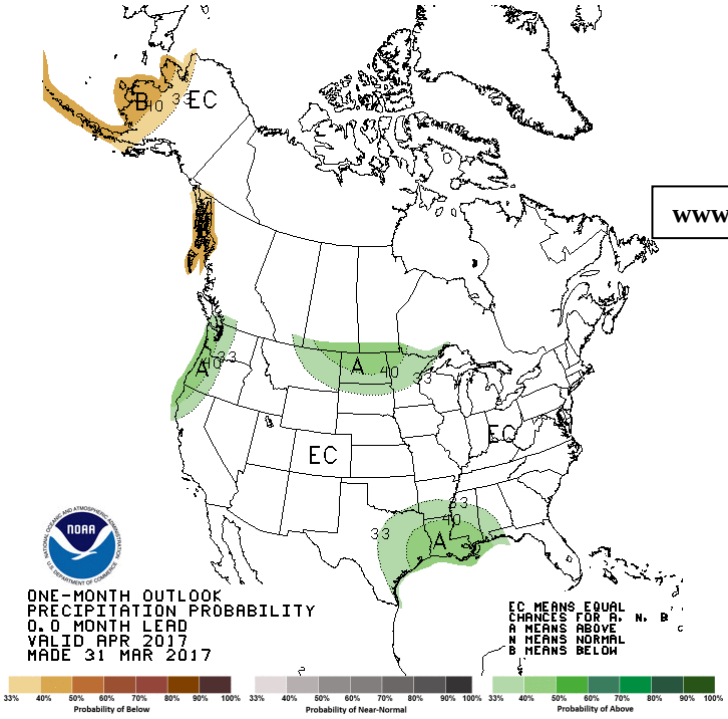
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/



www.cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



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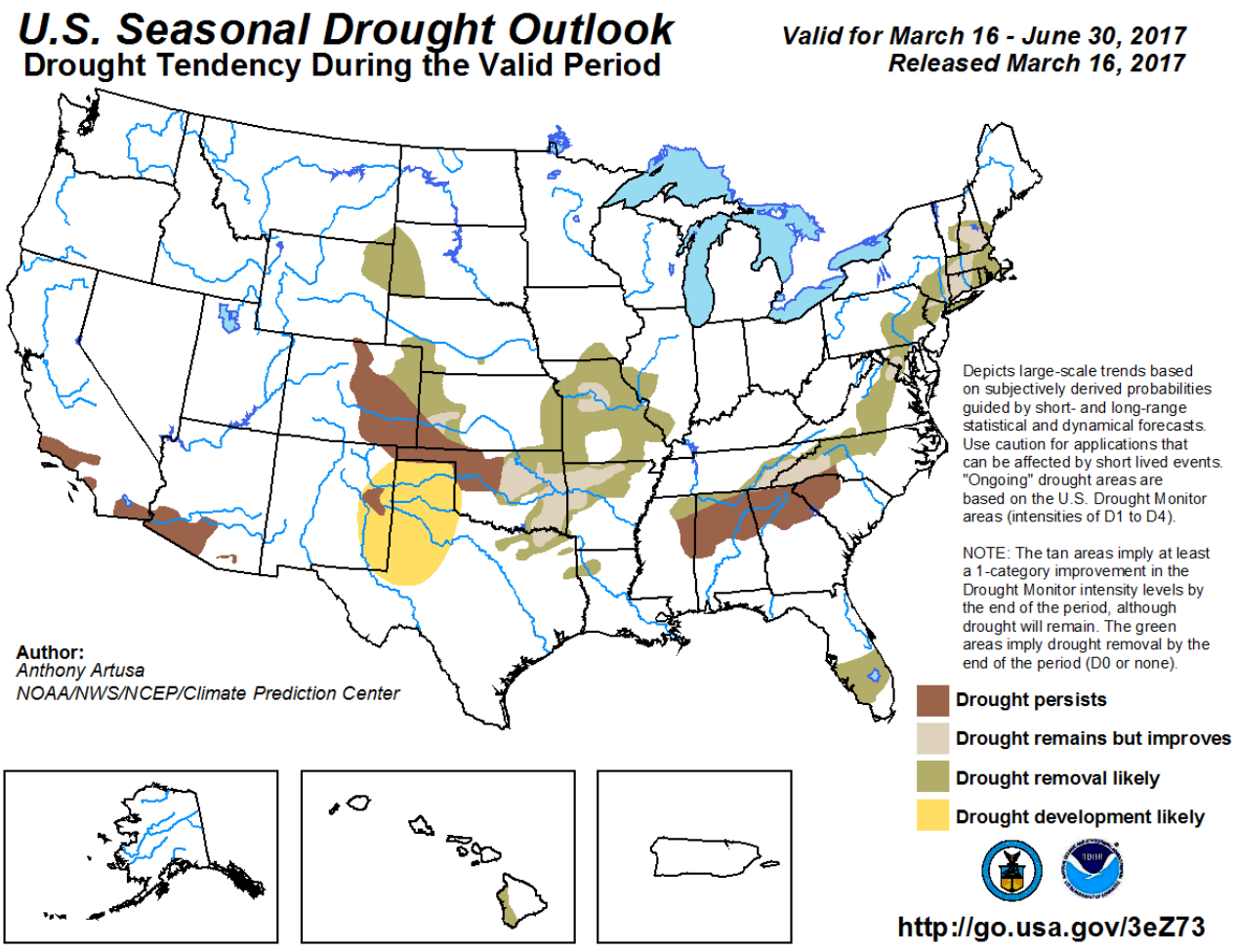

www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

cc:

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Taylor Dixon, Hydrologist, Northwest River Forecast Center
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PIH Mets/HMT (pih.ops)

End

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